Annotated Sheet Showing Changes

Appl. No. 09/722,382
Atty. Dkt.: 723-961
ANNOTATED SHEET
SHOWING CHANGES
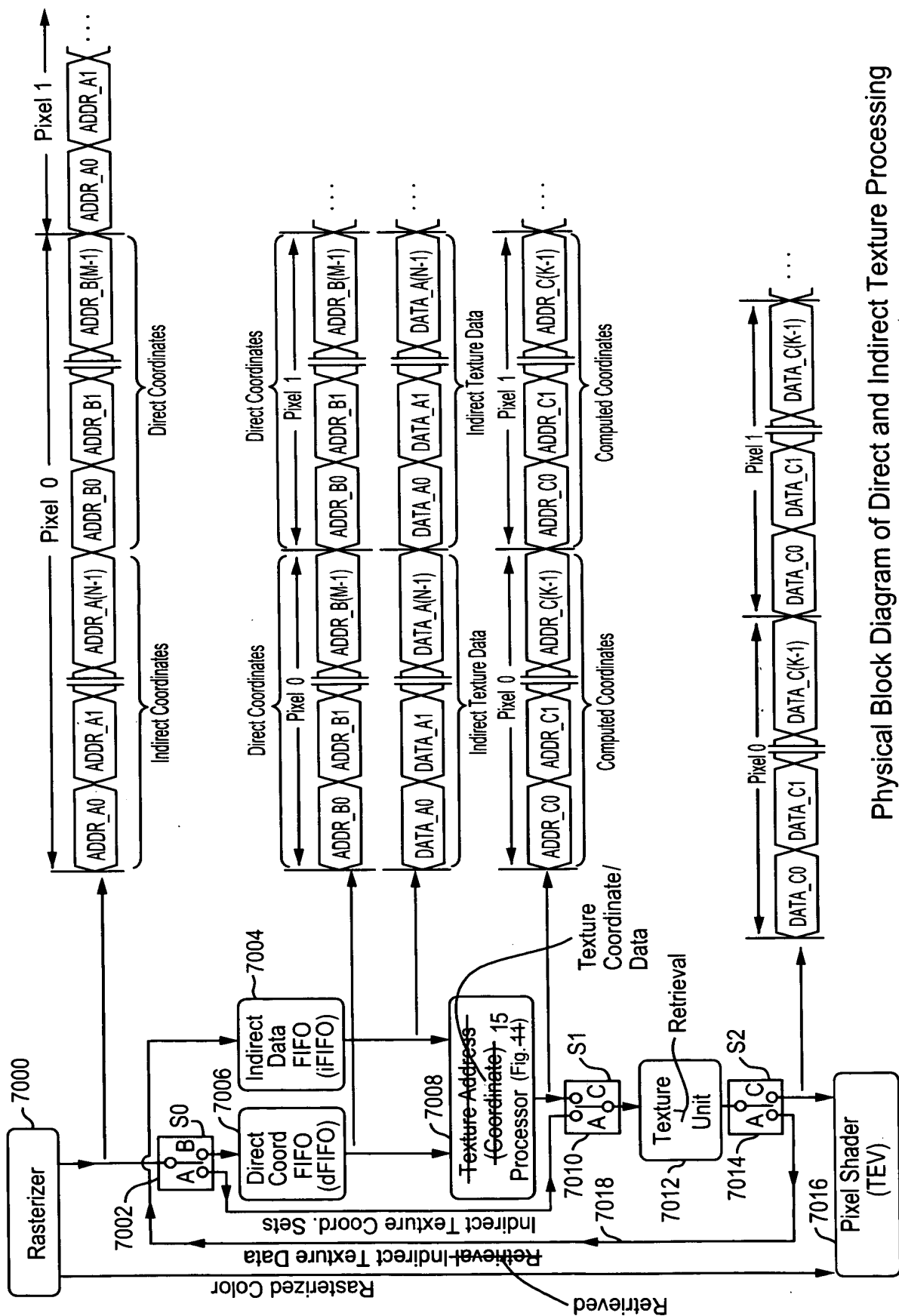
Logical Block Diagram of Indirect Texture Processing

Fig. 6

Annotated Sheet Showing Changes

Physical Block Diagram of Direct and Indirect Texture Processing

Fig. 8

Annotated Sheet Showing Changes

PX0 DIRect Coords

PX0 INDir. Coords

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

7002

S0

Direct
Coordinate
FIFO
(dFIFO)

Direct
Coordinate
FIFO Buffer

Indirect
Data
FIFO Buffer

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~
Processing

7008

S1

7010

Texture
Retrieval
Unit

7012

S2

7014

To Pixel
Shader

Fig. 10A

Annotated Sheet Showing Changes

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX0 DIRect Coords

7006

7004

Texture ~~Address~~ Coordinate
~~Processor~~ Processing

7008

S1

7010

PX0 INDir. Coords

Texture
Retrieval
Unit

7012

S2

7014

To Pixel

Shader

Fig. 10B

Annotated Sheet Showing Changes

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX0 DIRect Coords

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~ Processing

7008

S1

7010

Texture
Retrieval
Unit

7012

PX 0 Data

S2

7014

To Pixel
Shader

Fig. 10C

Annotated Sheet Showing Changes

PX49 DIRect Coords

⋮

PX2 DIRect Coords

PX1 DIRect Coords

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX0 DIRect Coords

PX0 Data

7006

7004

Texture ~~Address~~
~~Processor~~ Coordinate
Processing

7008

S1

7010

Texture
Retrieval
Unit

7012

S2

7014

To Pixel

Shader

Fig. 10D

Annotated Sheet Showing Changes

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX49 DIRect Coords

⋮

PX2 DIRect Coords

PX1 DIRect Coords

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~ Processing

7008

S1

7010

PX0 Comp Coords

Texture

Retrieval

Unit

7012

S2

7014

To Pixel

Shader

Fig. 10E

Annotated Sheet Showing Changes

PX50 DIRect Coords

PX50 INDir. Coords

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX49 DIRect Coords

⋮

PX3 DIRect Coords

PX2 DIRect Coords

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~
Processing

7008

S1

7010

PX1 DIRect Coords

Texture

Retrieval

Unit

7012

S2

7014

PX0 Tex Color

To Pixel
Shader

Fig. 10F

H/joy/723-849-F-10F.dwg

Annotated Sheet Showing Changes

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX50 DIRect Coords

PX49 DIRect Coords

⋮

PX3 DIRect Coords

PX2 DIRect Coords

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~
Processing

7008

S1

7010

PX50 INDir. Coords

Texture
Retrieval
Unit

7012

S2

7014

PX1 Tex Color

To Pixel
Shader

Fig. 10G

Annotated Sheet Showing Changes

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

S0   7002

Direct
Coordinate
FIFO
(dFIFO)

| PX50 DIRect Coords |
| PX49 DIRect Coords |
| ⋮ |
| PX4 DIRect Coords |
| PX3 DIRect Coords |

7006   7004

Coordinate
Texture ~~Address~~
~~Processor~~ Processing   7008

S1   7010

PX2 DIRect Coords

Texture
Retrieval
Unit   7012

S2   7014

To Pixel
Shader

PX50 Data

Fig. 10H

Annotated Sheet Showing Changes

Fig. 10I

H/joy/723-849-F-10I.dwg

Annotated Sheet Showing Changes

7002

S0

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

Direct
Coordinate
FIFO
(dFIFO)

PX50 DIRect Coords

PX49 DIRect Coords

⋮

PX6 DIRect Coords

PX5 DIRect Coords

7006

PX50 Data

7004

Coordinate
Texture ~~Address~~
~~Processor~~
Processing

7008

S1

7010

PX4 DIRect Coords

Texture
Retrieval
Unit

7012

S2

7014

PX3 Tex Color

To Pixel

Shader

Fig. 10J

Annotated Sheet Showing Changes

Retrieved
Indirect Texture Data
FIFO
(iFIFO)

7002

S0

Direct
Coordinate
FIFO
(dFIFO)

PX50 DIRect Coords

PX50 Data

7006

7004

Coordinate
Texture ~~Address~~
~~Processor~~
Processing

7008

S1

7010

PX49 DIRect Coords

Texture
Retrieval
Unit

7012

S2

7014

PX48 Tex Color

To Pixel
Shader

Fig. 10K

Fig. 14

EXAMPLE BUMP/TEXTURE
COORDINATE PROCESSING UNIT

Annotated Sheet Showing Changes

Appl. No. 09/722,382
Atty. Dkt.: 723-961
ANNOTATED SHEET
SHOWING CHANGES
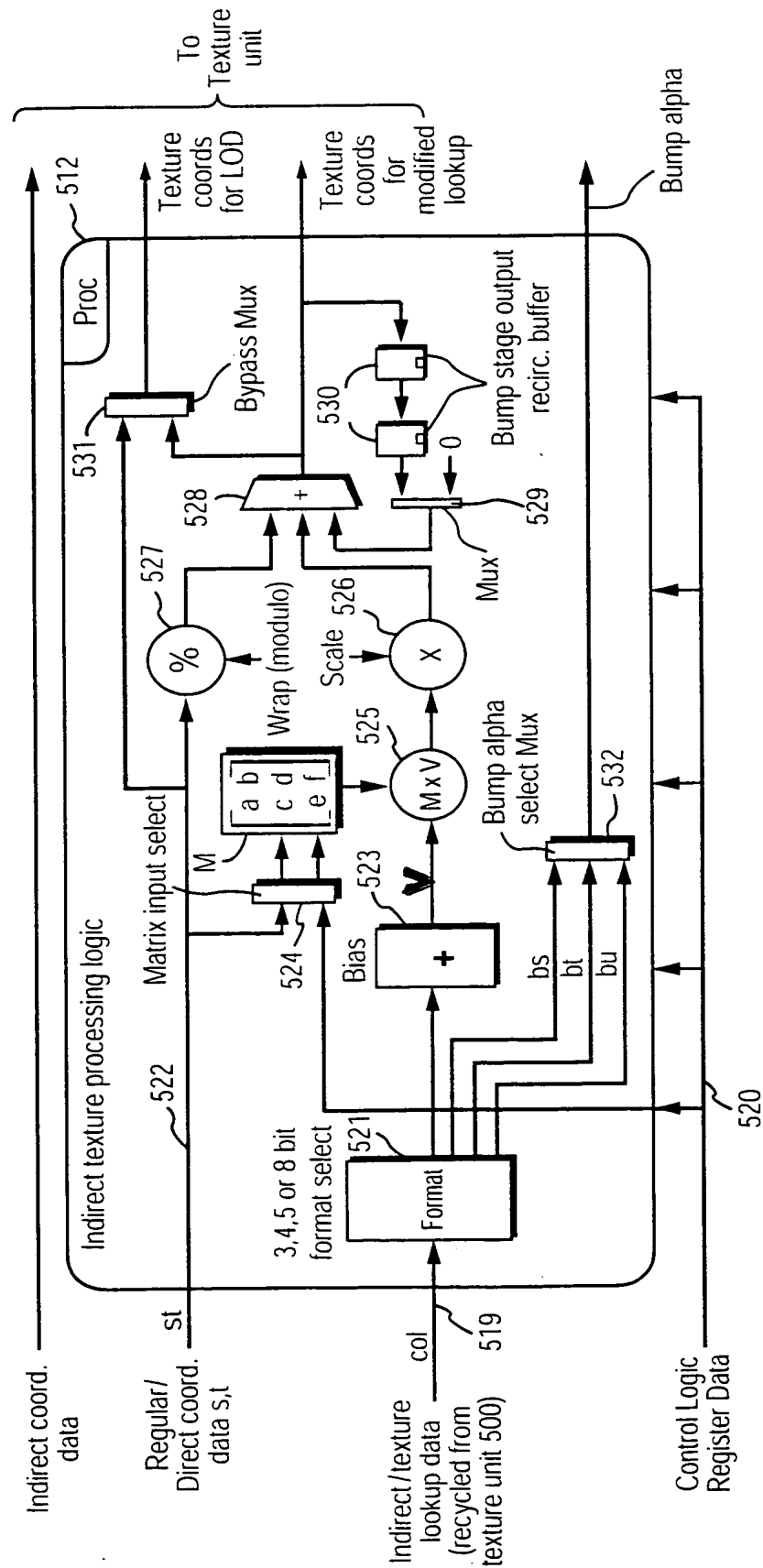
Fig. 15

EXAMPLE INDIRECT-TEXTURE
LOOKUP DATA PROCESSING LOGIC

Annotated Sheet Showing Changes

Appl. No. 09/722,382
Atty. Dkt.: 723-961
ANNOTATED SHEET
SHOWING CHANGES

$$\begin{pmatrix} s' \\ t' \end{pmatrix} = \begin{pmatrix} ma & mb \\ mc & md \\ me & mf \end{pmatrix} \cdot \begin{pmatrix} s \\ t \\ u \end{pmatrix}$$

M, V

Fig. 16A

EXAMPLE TEXTURE
~~STATIC~~ *OFFSET* ~~MATRICES~~
MATRIX

Matrix A

$$\begin{pmatrix} s/256 & t/256 \\ 0 & 0 \\ 0 & 0 \end{pmatrix}$$

Matrix B

$$\begin{pmatrix} 0 & 0 \\ s/256 & t/256 \\ 0 & 0 \end{pmatrix}$$

Fig. 16B

EXAMPLE TEXTURE
~~Dynamic~~ *OFFSET MATRICES*

$MTXA_i$	$s_i (1:0)$	$mb_i (10:0)$			$ma_i (10:0)$				
$MTXB_i$	$s_i (3:2)$	$md_i (10:0)$			$mc_i (10:0)$				
$MTXC_i$	$s_i (5:4)$	$mf_i (10:0)$			$me_i (10:0)$				
$CMDi$	▨	fb_i	▨	tw_i	sw_i	m_i	▨	$bias_i$	fmt_i bt_i

⋮

		imask (7:0)
GEN MODE ▨	nbmp	ntev	ntex

Fig. 17

EXAMPLE CONTROL
LOGIC REGISTERS